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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,171

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EXAMINER

PAK, YONG D

ART UNIT

PAPER NUMBER

1652

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,171	<b>Applicant(s)</b> LAVENS ET AL.	
	<b>Examiner</b> YONG D. PAK	<b>Art Unit</b> 1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 11 and 26-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-8, 11 and 26-29 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This application is a 371 of PCT/GN2005/000623.

Claims 1-8, 11, and 26-29 are pending. Examiner notes that it appears that applicants have also cancelled claim 12.

### ***Election/Restrictions***

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1 and 7-8, drawn to a method identifying an anti-fungal agent with targets a polynucleotide encoding an NADH:flavin oxidoreductase protein of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

Group II, claim(s) 1-8, drawn to a method identifying an anti-fungal agent with targets an NADH:flavin oxidoreductase protein of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof..

Group III, claim(s) 11, a method of detecting the presence of a fungus in a sample by detecting the presence of a polynucleotide encoding an NADH:flavin oxidoreductase protein of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof..

Group IV, claim(s) claim(s) 11, a method of detecting the presence of a fungus in a sample by detecting the presence of an NADH:flavin oxidoreductase protein of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof..

Group V, claim(s) 26 and 29, drawn to a polynucleotide encoding an NADH:flavin oxidoreductase protein of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof, vector and recombinant cell comprising said polynucleotide, organism comprising said polynucleotide, and production of said protein.

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Group VI, claim(s) 26, drawn to an NADH:flavin oxidoreductase protein of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

Group VII, claim(s) 26, drawn to a fungus which has been killed or whose growth has been impaired by inhibition of the expression of a polynucleotide encoding the polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

Group VIII, claim(s) 26, drawn to a fungus which has been killed or whose growth has been impaired by inhibition of the activity of the polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

Group IX, claim(s) 26, drawn to an antibody to a polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

Group X claim(s) 28, drawn to method of obtaining a polynucleotide encoding the polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof by condensation of nucleotides.

Group XI, claim(s) 27, drawn to method of preventing or treating a fungal infection by administering an anti-fungal agent.

Group XII, claim(s) 27, drawn to method of preventing or treating a fungal infection by administering a polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

Group XIII, claim(s) 27, drawn to method of preventing or treating a fungal infection by administering a polynucleotide encoding the polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

Group XIV, claim(s) 27, drawn to method of killing or impairing the growth of a fungus by inhibiting the activity of the polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

Group XV, claim(s) 27, drawn to method of killing or impairing the growth of a fungus by inhibiting the expression of a polynucleotide encoding the polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

Group X claim(s) 28, drawn to method of obtaining a polynucleotide encoding the polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof by condensation of nucleotides.

In addition, applicants are required to elect ONE polypeptide sequence selected from SEQ ID NO: 3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 and/or the source of the oxidoreductase as recited in claim 6.

**This is not an election of species.** The polypeptides of SEQ ID NO: 3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or the oxidoreductase isolated from the source recited in claim 6 and the polynucleotides encoding said polypeptides lack the same or corresponding special technical feature and are **patentably distinct inventions**. Each of the polynucleotides have different structure and/or function and encoded polypeptides having different structure and function, such as substrate specificity. Each of the polynucleotides and polypeptides are independent chemical entities and require independent search in the patent and non-patent literature.

The inventions listed as Groups I-XIV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The technical feature linking Groups I-XIV appears to be that they all relate to a polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

However, Williams et al. (Microbiology 2002 148: 1607-1614 – form PTO-892) discloses a protein comprising a polypeptide sequence comprising a fragment of SEQ

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ID No:3 (1607). Since applicants do not place any limitation on the structure of a protein comprising a fragment of SEQ ID NO:3, Examiner takes the position that the enzyme of Williams et al. is a protein comprising a fragment of SEQ ID NO:3 which as a length of at least 50 amino acids.

Therefore, the technical feature linking the inventions of Groups I-XIV does not constitute a special technical feature as defined by PCT Rule 13.2, as it does not define a contribution over the prior art.

The special technical feature of Group I is a method identifying an anti-fungal agent with targets a polynucleotide encoding an NADH:flavin oxidoreductase protein of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

The special technical feature of Group II is a method identifying an anti-fungal agent with targets an NADH:flavin oxidoreductase protein of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof..

The special technical feature of Group III is a method of detecting the presence of a fungus in a sample by detecting the presence of a polynucleotide encoding an NADH:flavin oxidoreductase protein of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof..

The special technical feature of Group IV is a method of detecting the presence of a fungus in a sample by detecting the presence of an NADH:flavin oxidoreductase protein of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof..

The special technical feature of Group V is a polynucleotide encoding an NADH:flavin oxidoreductase protein of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof, vector and recombinant cell comprising said polynucleotide, organism comprising said polynucleotide, and production of said protein.

The special technical feature of Group VI, claim(s) 26, drawn to an NADH:flavin oxidoreductase protein of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

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The special technical feature of Group VII is a fungus which has been killed or whose growth has been impaired by inhibition of the expression of a polynucleotide encoding the polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

The special technical feature of Group VIII is a fungus which has been killed or whose growth has been impaired by inhibition of the activity of the polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

The special technical feature of Group IX is an antibody to a polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

The special technical feature of Group X is a method of preventing or treating a fungal infection by administering an anti-fungal agent.

The special technical feature of Group XI is a method of preventing or treating a fungal infection by administering a polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

The special technical feature of Group XII is a method of preventing or treating a fungal infection by administering a polynucleotide encoding the polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

The special technical feature of Group XIII is a method of killing or impairing the growth of a fungus by inhibiting the activity of the polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

The special technical feature of Group XIV is a method of killing or impairing the growth of a fungus by inhibiting the expression of a polynucleotide encoding the polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof.

The special technical feature of Group XV is a method of obtaining a polynucleotide encoding the polypeptide of SEQ ID NO:3, 8, 12, 14, 19, 24, 42, 44, 83, or 85 or fragments/variants/homologs thereof by condensation of nucleotides.

Accordingly, Groups I-XV are not so linked by the same or a corresponding special technical feature as to form a single general inventive concept.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong Pak whose telephone number is 571-272-0935. The examiner can normally be reached 6:30 A.M. to 5:00 P.M. Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nashaat Nashed can be reached on 571-272-0934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

/Yong D Pak/  
Primary Examiner, Art Unit 1652